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Book reviews

Seafood and Freshwater Toxins; Pharmacology, Physiology and Detection
L.M. Botana (Ed.); Marcel Dekker, New York, 2000, 779 pp., ISBN 0-8247-8956-3, $225

Since the 1989 publication proceedings for the first international symposium on red tides, there has been an almost yearly release of a book, manual or conference proceedings which has attempted to keep up with the seemingly ever expanding topic of seafood toxins. With the discovery of the controversial *Pfiesteria* dinoflagellate in the mid 1990s, even congress and the public has taken notice of the seriousness of the topic. So much so that the subject Harmful Algal Blooms or HABs has become almost a household word. This current book titled Seafood and Freshwater Toxins, edited by Professor Luis M. Botana at the University of Santiago de Compostela, Spain, follows closely behind publication of the VIII International Conference on Harmful Algae also held in Spain in 1997. That volume, and the preceding seven harmful algae conference proceedings, has provided a constant reminder that harmful algae are an increasingly complex problem for the world's marine, estuarine and freshwater environments. While the eight conference proceeding publications emphasize shorter research results based presentations, this volume presents 11 review based topics each containing from one to six theme related chapters. The topics range from the introductory historical perspective to the economic impacts of harmful algae bloom episodes.

The first chapter within Part I is written by one of the most prominent natural product chemists studying marine phycotoxins—Professor Takeshi Yasumoto of Japan. Part II covers the epidemiological impact of neuro and nonneurotoxic marine phycotoxins. Part III looks at the use of selected neurotoxins as pharmacological tools to study calcium channels in neurons. This chapter presents an interesting and useful review of calcium channels but the neurotoxic tools examined are not phycotoxins or even seafood toxins but instead come mostly from marine cone snails (conotoxins) and related acting venoms.

Part IV returns to the topic of phycotoxins with five chapters devoted to a thorough coverage of the first phycotoxin group discovered—the saxitoxins, cause of Paralytic Shellfish Poisoning (PSP). Part V deals with the enteric phycotoxins including okadaic acid (Diarrhetic Shellfish Poisoning—DSP) plus the more recently discovered pectenotoxins and yessotoxins. Part VI reveals four chapters on domoic acid cause of Amnesic Shellfish Poisoning (ASP). This is the only marine phycotoxin group not produced by a dinoflagellate but instead by two related genera of diatoms—*Nitzschia* and *Pseudonitzschia*. The non-PSP neurotoxins, including the ciguatera toxins (cause of Ciguatera Seafood Poisoning) and brevetoxins (cause of Neurotoxic Shellfish Poisoning) is presented in five well-coordinated chapters within Part VII. Probably the most potent seafood toxin yet discovered is the topic of Part VIII. Palytoxin, first identified as the toxic compound from the zooanthid genus *Palythoa*, is passed through the food chain into animals and humans from crabs and fish that feed on *Palythoa*. Having a reported LD_{50} of 33 ng/kg in dogs (most phycotoxins have μg/kg LD_{50}'s), extracts containing palytoxin were used to coat the spears of native Hawaiians for use in hunting and warfare.

Part IX includes six chapters devoted to the topic of freshwater phycotoxins of cyanobacteria (blue–green algae). This subject has not been a significant part of previous books that emphasize marine phycotoxins. Its inclusion here represents a much welcomed effort to recognize the cyanobacterial Cyanotoxins as an important phycotoxin group, one worthy of further investigation by HAB researchers. Part X presents new toxins, that may or may not be produced by algae, including prorocentrolides, gymnodimine, pinnatoxin A, spirolides, pectenotoxins and azaspiracids. Part X also includes a chapter on marine toxins as starting points for preparation of therapeutic drugs. Part XI rounds out this book with an economic impact look at HABs and the seafood industry plus a chapter on remote sensing technologies to study and possibly predict harmful bloom occurrence.

At 779 pages this book is the largest yet on the topic of Harmful Algal Blooms and Seafood Toxins. However despite its page length one important topic that is lacking, and that will certainly need to be included in future volumes of this type, is the molecular biology and genetics of phycotoxin and seafood toxin production

and regulation. These types of studies are actively taking place but were not covered in this book. The topic is a vital one necessary to develop rapid detection methods for phycotoxins and their producer organisms and to uncover the ways these potent and life-threatening toxins are produced. As it stands the book will have a general appeal to anyone, especially phytochemists, interested in a better understanding of the topic. Probably more important it will appeal to the more serious researcher wishing to keep up with this increasingly diverse and widespread subject so that they can find new ideas and directions for their own research in Seafood and Freshwater Toxins.

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Plant Resources of South-East Asia No. 18. Plants Producing Exudates
E. Boer, A.B. Ella (Eds.); Backhuys Publishers, Leiden, The Netherlands, 2000, hardbound, €57, ISBN 90-5782-072-2

This book is a readable, well-organized, interesting description of the most economically important plants of South East Asia, and contains a great deal of useful information. It seems to present a thorough survey of its intended material, and in my opinion supercedes earlier publications that touch upon or include some of the same species, such as the cited "Gums, Resins and Latexes of Plant Origin" (1995) by J.J.W. Coppen, who also contributed to this volume. Also, I liked the clear definitions used, the excellent illustrations, and the inclusion of so many different aspects relevant to the selected species which were described in depth. The book is well enough written, and in relatively non-technical English, that the material should be readily accessible by scientists and generalists alike.

Although I did find it a useful and comprehensive volume, I was a little perturbed to note some inaccuracies and inconsistencies, as I read through the text. For example, the Foreword points out that the annual production of *Hevea brasiliensis* rubber is 5 million t—in fact, by 1998, data which was available in 2000 when the forward was written, annual production had risen to 6.6 million t. Similarly, the Introduction indicates that the solids content of *H. brasiliensis* latex is over 50%, instead of the actual 25–40%. Fortunately, the detailed description of this species in Section 2 (p. 73) does accurately report these, and many other facts. Nonetheless, inaccuracies also appear for other species, such as the statement that latex from *Ficus elastica* can be used for all applications of natural rubber, including dipped and extruded product types. The author of this section does later point out that the *F. elastica* rubber is of low molecular weight and hardens with time — but these properties actually *prevent* it from being used for most natural rubber applications. Thus, new researchers hoping to make use of the book should be sure to double-check the facts stated if accuracy is essential. Another deficiency was the lack of references to the long list of plants in Section 4 "Plants producing exudates, but with other primary uses". This comprehensive list would have been more useful if the reader had also been given a key reference upon which to base an expanded literature search into the individual species, rather than just the species name.

The comments in the previous paragraph, do not reflect "fatal flaws" in this generally fine book, and I consider that the book is well worth acquiring by those interested in this topic.

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